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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,458	09/28/2001	Gen Sasaki	214402US2	1724

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EXAMINER

JELINEK, BRIAN J

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 06/18/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,458

Applicant(s)

SASAKI, GEN

Examiner

Brian Jelinek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 7/5, and 7/6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

This is a first office action in response to application no. 09/964,458 filed on 9/28/2001 in which claims 1-13 are presented for examination.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. Japan 2000-302355, filed on 10/2/2000.

Drawings

Figures 13 and 14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed

The specification is objected to because of the following informalities: the "built-in memory" (page 1, line 23) is labeled element 180, but appears as element 108 in Fig. 13; the "stroboscope" (page 8, line 21) is labeled as element 20, but appears as element 29 in Fig. 1.

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Appropriate correction is required.

Claim Objections

Claims 9 and 13 are objected to because of the following informalities:

there is insufficient antecedent basis for the limitation in the claim.

Claim 9 recites the limitation "the time base" in line 3 of claim 9.

Claim 13 recites the limitation "the driving system " in line 3 of claim 13.

Appropriate correction is required.

Claim 13 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Fukuoka et al. (U.S. Pat. No. 6,212,331).

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Regarding claim 1, Fukuoka et al. teaches an image processing circuit (col. 11, lines 56-57) processing raw image data picked up with an image pickup device (col. 16, lines 46-51), comprising: compression means compressing digital image data (Fig. 5, element 107; col. 16, lines 56-58) obtained by A/D converting raw image data (Fig. 5, element 105; col. 16, lines 51-53); a buffer part temporarily storing compressed data transferred from said compression means (Fig. 5, element 108; col. 16, lines 58-61); expansion means reading said compressed data from said buffer part and expanding the same (Fig. 5, element 107; col. 17, lines 22-28); and an image processing part executing image processing on expanded data transferred from said expansion means (Fig. 5, element 106; col. 17, lines 26-29).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka et al. (U.S. Pat. No. 6,212,331).

Regarding claim 2, Fukuoka et al. teaches an interlaced first and second field (col. 19, lines 1-5). Fukuoka et al. also teaches that a buffer stores compressed data of a field (col. 5, lines 50-56), clearly either the first or second

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field may be stored. Furthermore, Fukuoka et al. teaches an image processing part reads the first field in synchronization with the entry of the second field (col. 5, lines 54-55).

Fukuoka et al. does not explicitly teach that the first and second fields are "odd" and "even" consisting of only odd and even lines, respectively. However, it is common practice in the art to so identify the first and second fields of interlaced images. It is also not explicitly stated that the image pickup device is interlaced and driven so as to output these odd and even fields. However, such is suggested in col. 1, lines 32-33; furthermore, Official Notice is given that such is a common driving method for generating interlaced signals using an interlaced image sensor. Although not explicitly stated, it is clear that the recited synchronization processing of the two fields takes place in Fukuoka et al. since individual fields are processed (col. 5, lines 51-56) and the second field is clearly in synchronization with the first field in order to produce the interlaced signal.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka et al. (U.S. Pat. No. 6,212,331) in view of Kerr (U.S. Pat. No. 5,844,600).

Regarding claim 3/1 and 3/2, Fukuoka et al. teaches DMA data transfer between a buffer and a memory (col. 5, lines 36-39). Fukuoka et al. does not teach DMA data transfer between a buffer and a compression/expansion means.

However, Kerr teaches data transfer between a compression means and a buffer, and data transfer between an expansion means and a buffer are controlled by a direct memory access system (col. 7, lines 22-25; Fig. 3A,

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element 234, 232, 224, and 228; col. 5, lines 56-63). As a result, it would have been obvious to incorporate the DMA memory transfer between a buffer and compression/expansion means of Kerr in order to maximize data transfer to and from the compression/expansion means and to minimize the processing burden on the CPU. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide DMA data transfer not only between a buffer and memory, but also between the buffer and a compression/expansion means for rapid data transfer between said buffer and said compression/expansion means while reducing CPU processing demands.

Claims 4 and 7/4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka et al. (U.S. Pat. No. 6,212,331) in view of Andrew (U.S. Pat. No. 6,351,568).

Regarding claims 4 and 7/4, Fukuoka et al. teaches that image data is compressed to a JPEG file (col. 8, line 36). Fukuoka et al. does not teach that image data is divided into a plurality of blocks, or that the blocks are composed of units of lines, before the image is compressed. In addition, Fukuoka et al. does not teach that expansion and compression is performed in units of blocks.

However, Andrew does teach dividing an image that is to be JPEG compressed into a plurality of 8x8 pixel blocks (a row of such blocks comprising a line unit), where both the compression and expansion is performed in units of blocks (Figs. 2 and 3; col. 1, lines 17-21; col. 9, lines 62-66; col. 10, lines 28-33 and 45-48). It would have been obvious to one of ordinary skill in the art at the

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time of the invention to provide the pixel blocks of Andrew in order to implement the JPEG compression of Fukuoka et al. As a result, it would have been obvious to divide image data into a plurality to blocks before compression.

Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka et al. (U.S. Pat. No. 6,212,331) in view of Thompson (U.S. Pat. No. 4,661,862).

Regarding claims 8-12, please note that all of the limitations of claims 1 and 2 are taught by Fukuoka et al. (see rejections for claims 1 and 2), except for a difference calculation means.

However, Thompson does teach specific methods for difference calculations that one of ordinary skill in the art would provide in Fukuoka et al. for calculating differences in order to provide an effective compression algorithm.

In particular, Thompson teaches calculating the difference between pixel values of a digital image data and using the difference in a compression means before compressing a digital image data in the compression means (Abstract, lines 5-6; Fig. 1; col. 2, lines 19-31). As a result, Thompson teaches (claim 8) a difference calculation means calculating the difference between pixel values of a digital image data and outputting the difference to a compression means before compressing the digital image data in the compression means. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the difference calculations of Thompson in order to provide and efficient compression algorithm in Fukuoka et al.

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Furthermore, Thompson teaches (claim 9) a difference calculation means calculates the difference between the values of pixels adjacent to each other along the time base because as time advances pixels S1 and S2, for example, remain adjacent for every interlaced scan of the odd field (col. 3, lines 24-63; Fig. 4; col. 8, lines 29-42).

Furthermore, Thompson teaches (claim 10) a difference calculation means calculates the difference between the values of alternate pixels along the time base because as time advances, pixels S2 and S5 remain on alternate lines (col. 3, lines 24-63; Fig. 4; col. 8, lines 29-42).

Furthermore, Thompson teaches (claim 11) a difference calculation means calculates the difference between the values of vertically adjacent two pixels of two lines of said digital image data because pixels S2 and S4 are vertically adjacent on two lines of the same field (col. 3, lines 24-63; Fig. 4; col. 8, lines 29-42).

Furthermore, Thompson teaches (claim 12) a difference calculation means calculates the difference between the values of vertically adjacent two pixels of alternate lines of a digital image data because pixels S2 and S4 are vertically adjacent on alternate lines (col. 3, lines 24-63; Fig. 4; col. 8, lines 29-42).

Allowable Subject Matter

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Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 5, the reason for allowance is as follows: the prior art does not disclose or fairly suggest detecting a block including a defective pixel data among expanded data and outputting a corrected block to compression.

Regarding claim 6, the reason for allowance is as follows: the prior art does not disclose or fairly suggest defect inspection and correction on expanded data before being output to compression.

Claim 7/5 and 7/6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See claims 5 and 6 for reasons for allowance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Jelinek whose telephone number is (703) 305-4724. The examiner can normally be reached on M-F 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Jelinek
5/10/2004



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